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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
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ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/511,146	KUJIRAI, MASAMI	
	Examiner	Art Unit	
	Margaret G. Moore	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4, 7, 8, 10, 21 to 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4, 7, 8, 10, 21 to 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Claims 4, 7, 8, 10 and 21 to 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner apologizes for not making this rejection in previous office actions. It is improper and seemingly confusing to define R_1 to R_3 as OH, since this will resulting in an Si-O-OH group, i.e. one having an O-O group. This is different from the desired silanol group. For prior art purposes the Examiner will consider this formula as being one in which R_1 to R_3 are H such that the Si atom can contain 3 –OH groups attached thereto.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 4, 7, 8, 10, 21, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Havey et al.

The teachings in this reference were detailed in the previous office action and as such this will not be repeated. In an effort to overcome this rejection applicants provide a Declaration under 35 USC 1.132 trying to establish that "consisting essentially of" excludes the tetrafunctional silane disclosed in Havey et al. The Examiner does not find this persuasive.

On one hand, she notes that the tetrafunctional silanes in Havey et al. are actually within the breadth of the silane coupling agent of formula (I) shown in claim 4. An alkoxy group certainly qualifies as a group reactive or compatible with organic materials. Since such silanes are embraced by the silane coupling agent, applicants cannot attempt to rely on "consisting essentially of" to exclude them.

On the other hand, applicants' showings are not sufficient to establish that the presence of any extra components in Havey et al., such as tetraalkoxysilanes and alcohol, materially affect the basic and novel characteristics of the claimed invention. As applicants are aware, applicants have the burden of showing that the introduction of

additional components would materially change the characteristics of applicants' invention. These three experiments are not sufficient.

As applicants note in the response, Havey et al. require both an aqueous solvent and a tetrafunctional silane component. Applicants even note that Havey et al. use an organic solvent to control hydrolysis. On the contrary, the Declaration examples do not contain an alcohol. While one could argue (though the Examiner does not concede) that the Declaration examples show that tetrafunctional silane could be excluded from the composition in the claims by the language "consisting essentially of" there is nothing that shows that the prior art combination of tetraalkoxysilane and organic solvent are excluded by the language "consisting essentially of". This is true particular in view of the fact that 1) tetraalkoxysilanes are within the breadth of formula (I) as found in the claims and 2) alcohols are specifically disclosed as optional ingredients on page 21 of the instant specification.

In addition to this, the Examiner notes that the amounts of each silane found in the Declaration examples are significantly different from the amounts found in the teachings of Havey et al. such that one cannot really compare the comparative examples to those in the prior art and that claimed to determine if the examples are representative of the breadth of the claims. For instance both Experiments (2)-2 and (2)-3 use a 1:5 wt% ratio of epoxy silane to tetraethoxysilane. It is unclear if this is representative of the scope of the additional compound in Havey et al. In addition, the combined lower limit of total epoxy silane and tetraethoxysilane in Havey et al. is 10 wt % while the combined amount of epoxy silane and tetraethoxysilane in the Declaration examples is 6 wt%. It is unclear if this difference could contribute to the difference in final results.

For these reasons, the data provided is not sufficient to overcome the rejection as it does not provide clear and convincing evidence that the materials found in Havey et al. are excluded from the claims by the phrase "consisting essentially of".

4. Claims 4, 8, 10 and 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Howes.

Howes teaches a method of preparing a decorative glass. Particular attention is directed to column 8, lines 54 and on. This teaches a method in which one side of a glass sheet is coated with a mixture of alcohol (which is not excluded by the language "consisting essentially of"), deionized water and the silane A 174, which is a methacryl-oxypropyl functional silane meeting the formula (1). While this is added in an amount of .5% by vol., the Examiner notes that such an amount will fall within the claimed weight range.

This differs from that claimed only in that 1) Howes does not specify a total anion content as claimed and 2) this does not specifically recite the physical properties claimed. With regard to the first difference, the Examiner refers applicants to the rationale noted by the Examiner in paragraph 3, pages 2 to 3, of the office action dated 12/20/06. This notes the typical or expected inherent anion content of deionized water or, in the alternative, indicates why one having ordinary skill in the art would have found such a claimed range obvious. The Examiner relies on this rationale as it presently applies.

With regard to the second difference, also as noted in the office action dated 12/20/06, products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present.

In this manner the instantly claimed glass is inherently taught and/or would have been obvious over the teachings in Howes.

With regard to claims 10 and 25, please note that the silane coating is placed on the decorative side of the glass, which would be facing inward so the decorative side can be observed and appreciated from the inside of a building.

5. Claims 4, 8, 21 and 23 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cross et al.

Please see column 3, lines 54 to 64, in Cross et al. This teaches the use of an aminosilane primer, as a 2% solution in deionized water, applied to one surface of a glass substrate. This meets the claimed glass. The Examiner relies on the rationale of

record regarding 1) the inherency and/or obviousness of the claimed anion content and 2) the physical properties of the glass as claimed.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Howes or Cross et al.

Howes fails to teach the thickness of the coating composition. Adjusting the thickness of the coating composition, in an effort to balance the desired adhesive properties and the transparency and decorative effects of the final glass substrate, would have been obvious and well within the skill of the ordinary artisan. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (i.e. does not require undue experimentation). In this manner one having ordinary skill in the art would have found the claimed thickness range to have been obvious.

Cross et al. fail to teach the thickness of the coating composition. Adjusting the thickness of the coating composition, in an effort to balance the desired adhesive properties and the usefulness of the primer composition, would have been obvious and well within the skill of the ordinary artisan. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (i.e. does not require undue experimentation). In this manner one having ordinary skill in the art would have found the claimed thickness range to have been obvious.

7. Claims 4, 8, 10, 21, 24 and 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Isoda et al.

Isoda et al. teach a method of producing an silanol compound. This compound corresponds to the general formula (I) found in claim 1, wherein R_1 to R_3 are H groups such that the Si atoms has 3 -OH groups bonded thereto (see paragraph 1, supra). Please see column 8, lines 13 and on, in which a solution of the aminosilanol is added to deionized water in an amount that falls within the claimed range. This is then coated onto a slide glass. This meets the claimed glass. The Examiner relies on the rationale

of record regarding 1) the inherency and/or obviousness of the claimed anion content and 2) the physical properties of the glass as claimed.

The Examiner notes, too, that the comparative example also meets the claimed glass, in which the Si atom has three ethoxy groups bonded thereto.

For claims 10 and 25, the Examiner notes that one having ordinary skill in the art would only have 2 way in which to position the glass of Isoda et al.. Either the coated glass side can face inward or face the direction from which the solar radiation heat is irradiated. In view of this limited selection, one having ordinary skill in the art would have immediately envisioned positioning the glass of Isoda et al. such that the glass substrate side, rather than the coated side, faces the direction from which solar radiation heat is irradiated. On the other hand, one having ordinary skill in the art would have found such a positioning of the glass in Isoda et al. to have been obvious given the limited selection of positions.

8. Claims 7, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isoda et al.

With regard to claim 7, please note that adjusting the thickness of the coating in Isoda et al. would have been obvious to one having ordinary skill in the art in an effort to balance the desired properties associated with the coating composition (for instance the wetting property) and the effects of such a coating on the final glass utility.

For claims 22 and 24, please see the bottom of column 4 which teaches the addition of a surface active agent. Given the teachings of surface active agent in Isoda et al. and the fact that surface active agents fall into one of four main categories (cationic, anionic, non-ionic and amphoteric), the skilled artisan would have immediately envisioned a surface active agent that is either cationic or nonionic from the teachings of Isoda et al. Adjusting the amount of surface active agent in an effort to determine what is operable and/or beneficial (for instance in promoting the uniform dispersion of the amino silane in the coating composition) would have been obvious to one having ordinary skill in the art. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine

skill in the art (i.e. does not require undue experimentation).

9. Claims 4, 8, 10 and 21 to 25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Avery et al.

Avery et al. teach the production of stable hydrolyzable organosilane solutions. Particular attention is directed to Example 26 in which an aminosilane and various surfactants, including the nonionic ICONOL DA-6, are added to deionized water in amounts which fall within the claimed range.

The Examiner relies on the rationale noted supra with regard to the anion content in deionized water and the physical properties claimed.

Column 22, lines 53 and on, teach applying the silane solution to a side of glass plate. This meets the requirement of the instant claims. On the other hand, one having ordinary skill in the art would have been motivated to apply the coating to one side of the glass plate in an effort to take advantage of the silane coating on only one side of the glass.

For claims 10 and 25, the Examiner notes that one having ordinary skill in the art would only have 2 way in which to position the glass of Avery et al. Either the coated glass side can face inward or face the direction from which solar radiation heat is irradiated. In view of this selection, the skilled artisan would have immediately envisioned positioning the glass of Avery et al. such that the glass substrate side, rather than the coated side, faces the direction from which solar radiation heat is irradiated. On the other hand, one having ordinary skill in the art would have found such a positioning of the glass in Isoda et al. to have been obvious given the limited selection of positions.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret G. Moore whose telephone number is 571-272-1090. The examiner can normally be reached on Monday and Wednesday to Friday, 10am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Margaret G. Moore/
Primary Examiner, Art Unit 1796

mgm
1/13/09